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ABSTRACT

Beginning with the background to the 1980 passage of Massachusetts' Proposition 2 1/2, the authors analyze the first-year effects of the property tax limitation measure. Section 1 describes Massachusetts' previous high dependence on property taxes and outlines the provisions of Proposition 2 1/2. Section 2's analysis indicates that the state's property taxes are so high because local governments cannot use other taxes. Earlier attempts to lower taxes are also covered. Local governments' aggregate statewide revenue losses because of the measure are estimated in section 3, which also looks at the response of increased aid from state government. Section 4 analyzes the impact of Proposition 2 1/2 in terms of communities' population size and the amount of their revenue loss. It finds the greatest revenue losses were in large communities and in communities with moderately high income, property, and tax levels, but that small towns benefited most from the state aid increase. Data in section 5 indicate that Proposition 2 1/2 affected school spending more than other local spending and increased somewhat the disparities across communities in education service levels. The final section summarizes the paper and suggests ways of ameliorating some of the measure's long-run effects. (Author/RW)

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PROPOSITION 2-1/2: INITIAL IMPACTS

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June 1982

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Abstract

Proposition 2½ was passed by voter initiative more than a year ago in the State of Massachusetts. This stringent tax limitation measure takes its name from its major provisions: high tax rate communities must reduce property tax levies 15 percent per year until the tax rate is reduced to the maximum allowable rate of 2½ percent of full and fair market value, and low tax rate communities may increase property tax levies but by no more than 2½ percent per year.

A full statewide accounting of the first year effects of Proposition 2½ on local taxes and spending is not possible until final tax and spending information is available for the 1982 fiscal year. In the meantime, policymakers need timely information about the initial impacts of Proposition 2½. This paper outlines Proposition 2½'s major provisions and relates them to the level and growth of Massachusetts property taxes and spending. Because a major goal of Proposition 2½ was to reduce property tax burdens, the paper will examine why Massachusetts property taxes are so high relative to those of other states and briefly describe previous unsuccessful attempts to lower them. The first-year aggregate effects of the measure, including its effect on property tax assessment follows. The final part of this paper analyzes the first-year changes in revenue and spending experienced by different types of cities and towns, examines the preliminary impact on school budgets, and concludes with the policy implications.

PROPOSITION 2-1/2: INITIAL IMPACTS

Katharine L. Bradbury and Helen F. Ladd, with Claire Christopherson

More than a year has passed since Massachusetts voters overwhelmingly supported a stringent tax limitation measure in November 1980. The measure, commonly called Proposition 2-1/2, takes its name from its major provisions: Proposition 2-1/2 required high tax rate communities to reduce property tax levies 15 percent per year until the tax rate is reduced to the maximum allowable rate of 2-1/2 percent of full and fair market value. Low tax rate communities may increase property tax levies but by no more than 2-1/2 percent per year.

Because Proposition 2-1/2 is an initiative law rather than a constitutional amendment, it can be repealed or amended by the legislature. In light of the 59 percent favorable vote of the electorate, state legislators were unwilling to tamper with any of the major provisions affecting the first year revenue losses discussed in this paper. At the end of the 1981 session, however, the legislature amended Proposition 2-1/2 to ease its impact in future years.

A full statewide accounting of the first year effects of Proposition 2-1/2 on local taxes and spending is not possible until final tax and spending information is available for the 1982 fiscal year.[1] In the meantime, however, policymakers need timely information about the initial impacts of Proposition 2-1/2. Section I outlines Proposition 2-1/2's major provisions and relates them to the level and growth of Massachusetts property taxes and spending. Because a major goal of Proposition 2-1/2 was to reduce property tax burdens, Section II examines why Massachusetts property taxes are so

high relative to those of other states and briefly describes previous unsuccessful attempts to lower them. Section III looks at the first-year aggregate effects of Proposition 2-1/2, including its effect on property tax assessment. The following three sections analyze the first-year changes in revenue and spending experienced by different types of cities and towns, examines the preliminary impact on school budgets, and concludes with the policy implications.

I. Proposition 2-1/2 and the Local Fiscal Context

The 351 cities and towns in Massachusetts levy all the property taxes in the state. These municipalities include large urban centers, wealthy bedroom communities, and small poor communities in rural areas. In contrast to many other states, especially those outside New England, county governments and special districts in Massachusetts have few responsibilities and finance their budgets by assessing the cities and towns. The property tax is the only broad-based tax that Massachusetts cities and towns can use. Small amounts of motor vehicle excise revenue account for their only other tax revenues.

Local schools are also financed largely through property taxes levied by cities and towns. Most school district boundaries are the same as those of cities and towns. Before Proposition 2-1/2, school committees enjoyed fiscal autonomy in the sense that each city or town legislative body was required to accept the school budget as proposed by the school committee and to raise the necessary property taxes as part of the municipal tax levy. The budgets of regional academic and vocational school districts were financed by assessments on the member cities and towns in accordance with agreements made at the time of school district formation.

Two characteristics of local government in Massachusetts are noteworthy. First, local property tax burdens are high compared to those in other states. Second, local spending -- especially school spending -- has recently grown more rapidly than the U.S. average.[2] Massachusetts has been among the four states with the highest property taxes per capita and among the 12 states with the highest property taxes as a percent of income for at least 20 years. In fiscal year 1980 (FY80), Massachusetts communities collected an average of $555 per capita through property taxes, as compared to $290 for local governments in the country as a whole. Property taxes averaged 6.2 percent of personal income in Massachusetts, and 3.4 percent for the nation.

During the 1970s, local government expenditures in Massachusetts increased faster than the United States average both per capita and as a percent of local personal income. From FY71 to FY80, per capita direct general expenditures of Massachusetts local governments increased at an annual rate of 9.9 percent, a percentage point faster than the nation. Taxes as a percent of personal income grew 2.0 percent in Massachusetts, while they rose less than 1 percent for the United States as a whole.

Local education expenditures comprised 47 percent of total local expenditures in Massachusetts in FY80. Their growth, in particular, exceeded national growth averages: The annual growth in local school expenditures in Massachusetts, both per capita and as a percent of income, exceeded the corresponding national growth rates by over 3 percentage points during the FY71 to FY79 period. In <u>per pupil</u> terms, Massachusetts expenditures were 5th highest among the states in FY78 and 23 percent above the U.S. average. They reached this level from a position below the national average as recently as 1971.[3]

Proposition 2-1/2 was designed to alter both the high level of property taxes and the rapid growth in local expenditures. On the revenue side, the most important provision was the limitation of local property tax levies to 2-1/2 percent of the fair market value of taxable property.[4] Cities and towns with tax rates above this limit were required to reduce their levies by the amount required to reach the limit or by 15 percent per year, until the limit was reached. Estimates by the Massachusetts Department of Revenue show that 182 of the 351 cities and towns, which encompass more than 79 percent of the state's population, were required to reduce property tax levies in the first year under this provision, with many facing reductions in future years as well.

The property tax rollback provision was made more stringent by the stipulation that local property tax levies could not rise by more than 2-1/2 percent per year once the limit was reached, regardless of growth in the taxable property base. This growth limit also applied to all communities below the 2-1/2 percent rate ceiling. The recent amendment modifies this provision by excluding from the levy growth limit revenue from new development. Finally, the Proposition further affected local tax revenues by reducing the motor vehicle excise tax rate from 6.6 percent to 2-1/2 percent; this tax is levied at a statewide uniform rate, but accrues to local treasuries.

Although Proposition 2-1/2 permitted local voters to override the revenue limits by a two-thirds vote in a local referendum during a statewide election, statewide elections are held only every two years and their fall date is incompatible with the spring budgetary period of local governments. Hence, the local override was not a viable option for voters during the Proposition's first year. The recently enacted amendment will make local

overrides easier in the future; a local override referendum can now be set at any time by a two-thirds vote of a city council or board of selectmen. A majority vote in such a referendum can reduce revenue cuts for the year from 15 percent to 7-1/2 percent or can increase the levy growth limit from 2-1/2 percent to 5 percent. A two-thirds vote can completely eliminate the revenue reduction or can remove the limit on levy increases for the year, provided the effective tax rate remains below 2-1/2 percent.

The nonrevenue provisions of Proposition 2-1/2 included abolition of the fiscal autonomy of local school committees except in Boston; repeal of compulsory and binding arbitration for police and fire personnel; prohibition of state laws that impose costs on municipalities unless the state assumes responsibility for those local costs; and limitation to 4 percent annually of increases in assessments by other governmental bodies (such as special districts) on municipalities.[5] This study examines only the first of these nonrevenue provisions, the abolition of school committee autonomy. The Department of Revenue has ruled that, under Proposition 2-1/2, school committees lose their control over only the bottom line appropriation; they still retain the right to allocate the budget among line item expenditures. In a separate ruling, the Department declared that regional school districts would be treated just like local schools, with each member town having authority to approve or disapprove its share of the budget.

II. Why Property Taxes are So High in Massachusetts

Governmental inefficiency and waste were commonly cited at the time of the vote on Proposition 2-1/2 as the cause of Massachusetts' high property taxes. Unfortunately, public sector expenditures cannot easily be separated into their productive and nonproductive components. However, it is possible

to identify the extent to which above-average property taxes reflect above-average expenditures or above-average local reliance on local property taxes.

Table 1 analyzes three possible explanations for the difference between per capita property tax burdens in Massachusetts and those in the United States as a whole in FY80: differences in total state and local spending per capita, in local spending as a share of state and local spending, and in property taxes as a fraction of local expenditures.[6] The first column shows that $555 per capita property tax burden in Massachusetts, the $290 U.S. average burden, and the percentage by which the Massachusetts burden exceeds the U.S. average. Columns 2, 3, and 4 show the multiplicative components of the following identity:

$$\frac{\text{local property taxes}}{\text{population}} = \frac{\text{state and local direct general expenditures}}{\text{population}} \times \frac{\text{local direct general expenditures}}{\text{state and local direct general expenditures}} \times \frac{\text{local property taxes}}{\text{local direct general expenditures}}$$

The differences between Massachusetts and the national average for each component show the percentages by which Massachusetts property taxes per capita would exceed or fall short of the U.S. average solely as a result of variation in each component. For example, the 10.7 percent above-average state and local per capita spending in Massachusetts raises property taxes 10.7 percent above the U.S. average. Similarly the 9.1 percent below-average local share lowers Massachusetts property taxes 9.1 percent below the U.S. average.

The clearcut conclusion emerges that most of the property tax burden in Massachusetts can be accounted for by above-average reliance on local property taxes to finance local spending. Property taxes as a fraction of local

TABLE 1

WHY ARE MASSACHUSETTS LOCAL PROPERTY TAXES ABOVE AVERAGE?

Component Parts of Differences in Per Capita Property Taxes, FY80

	$\frac{\text{Local property taxes}}{\text{Population}}$		$\frac{\text{State and local direct general expenditures}}{\text{Population}}$		$\frac{\text{Local direct general expenditures}}{\text{State and local direct general expenditures}}$		$\frac{\text{Local property taxes}}{\text{Local direct general expenditures}}$
Massachusetts	$ 555.	=	$ 1796.	x	0.554	x	0.558
United States	290.	=	1622.	x	0.609	x	0.293
Difference between Mass. and U.S. as Percent of U.S.	+91.5%		+10.7%[a]		-9.1%[a]		+90.2%[a]

Source: Governmental Finances in 1979-80, Tables 5, 12, and 27.

[a] These percentages can be interpreted as the percentages by which property taxes in Massachusetts differ from the U.S. average solely as a result of deviation of the component from the U.S. average.

direct general expenditures are 56 percent in Massachusetts in contrast to 29 percent in the United States as a whole. The importance of this 90 percent difference can be seen as follows: if Massachusetts had derived the same proportion of its local revenues from property taxes as other states in 1980, but had its own 1980 total spending level and local spending share, Massachusetts property tax burdens would have been $292, or essentially the same as the United States average.

The contribution of above-average per capita state and local spending should also be noted, but its contribution to the difference in property tax burdens is only one-eighth as great as that of the sources-of-local-revenues variable. This finding indicates that above-average spending is not the major cause of the state's high property taxes. Hence it follows that while wasteful spending may play some role, it cannot be the major culprit.

Local governments in Massachusetts account for a slightly smaller share of state and local spending than local governments nationally. This reflects the limited role of Massachusetts county governments, and high state spending on redistributive functions such as welfare and Medicaid. Because of the offsetting effects of above-average state and local spending and below-average local share, local direct general expenditures per capita in Massachusetts are less than 1 percent above the United States average ($994 vs. $987).

Table 2 takes the analysis one step further by showing the specific components of local revenue in Massachusetts and in the United States as a whole. Column 1 shows that property taxes account for about 49 percent of local government general revenues in Massachusetts and about 28 percent in the United States. (These percentages differ from those in the last column of Table 1 because local general revenues are not precisely equal to local

TABLE 2

WHY ARE PROPERTY TAXES SUCH A LARGE
SHARE OF LOCAL REVENUE IN MASSACHUSETTS?

Specific Revenue Sources as Fractions of Local General Revenue, FY80

	Property Taxes	State aid	Federal aid	Other
Massachusetts	0.495	0.278	0.127	0.100
United States	0.282	0.350	0.091	0.277
Difference between Mass. and U.S.	+0.213	-0.072	+0.036	-0.177

Source: Governmental Finances in 1979-80, Table 5.

direct general expenditures.) The key finding is that in Massachusetts "other" (i.e., neither aid nor property tax) revenue sources account for only 10 percent of local general revenues, a percentage well below the 28 percent U.S. average. Thus, we conclude that a major explanation for high property taxes in Massachusetts is that local governments are not empowered to use other taxes such as income or sales taxes and that they rely less than other states on fees and charges.[7]

Another smaller factor contributing to the high property tax proportion is the below-average aid, expressed as a fraction of local general revenues, provided by the Massachusetts state government. If Massachusetts had given the average proportion of state aid in 1980, property taxes as a fraction of local general revenue would have been reduced by 7.2 percentage points to 42.3 percent of local revenues. According to the equation in Table 1, this reduction would have decreased per capita property taxes by about 14 percent.

Concern about high property taxes in Massachusetts is not a recent phenomenon. Many studies have documented its adverse effects, especially those related to the large disparities in property tax rates across jurisdictions.[8] During the past 15 years, the state legislature has tried to alleviate property tax burdens by increasing the amount of state aid distributed to local governments and by taking over responsibility for certain local expenditure functions. None of these state actions can be considered successful if the criterion for success is how high property taxes were after their enactment. Even in the years in which state aid increased substantially, local property taxes continued to rise. However, in the absence of such policies, property taxes would be even higher than they are now.

Moreover, many of these state actions were oriented toward the equalization of resources across communities as well as alleviation of local property tax burdens.

Table 3 shows the growth in property tax levies and the change in state aid to local governments in Massachusetts during the period 1966 to 1981. State actions during this period can be summarized as follows: In 1966, the state government introduced an equalizing school aid program financed by a newly instituted state sales tax. In spite of large percentage increases in state aid during 1966 and 1967, however, property taxes still grew by over 10 percent in 1967. A second potential reduction in property tax levies was effected with the state takeover of all welfare costs from local governments in 1969. The state share of funding of public welfare spending increased from 41.2 percent in 1967 to 53.9 percent in 1971 as the local share fell from 10.8 percent to virtually zero and the federal share fell by two percentage points. This was a substantial shift at the time, and has become more important as the budget share of public welfare expenditures in Massachusetts has grown from 12.8 percent of state and local direct governmental expenditures in 1967 to 19.4 percent in 1971 and 16.6 percent in 1978.

In 1971, the state lottery was started with the revenue earmarked for local communities and distributed according to an equalizing municipal grant formula. This formula, which will be discussed further below, equalizes revenues available to cities and towns by varying the per capita amount of aid inversely with the wealth of the jurisdiction as measured by per capita equalized valuation.

Another policy aimed at alleviating property tax burdens occurred in 1975 when the state assumed responsibility for one-half of a rapidly rising Massachusetts Bay Transit Authority deficit which previously had been financed fully by local property taxes in the transit region. This was

Table 3

CHANGES IN LOCAL PROPERTY TAXES AND STATE AID IN MASSACHUSETTS

Year[a]	Property Tax Levies (millions)	Annual Change in Property Tax Levy	Annual Change in State Aid[b]
1966	$973	0.9%	26.0%
1967	1,076	10.6	28.3
1968	1,227	14.0	-2.8
1969	1,401	14.2	16.4
1970	1,631	16.3	9.0
1971	1,851	13.6	10.1
1972	2,050	10.8	28.8
1973	2,168	5.8	transition year
FY1975	2,322	4.7[c]	transition year
FY1976	2,461	5.9	2.6
FY1977	2,783	13.1	-2.2
FY1978	2,967	6.6	4.9
FY1979	3,030	2.1	22.3
FY1980	3,000	-1.0	17.5
FY1981	3,350	11.5	1.2

[a] During 1973-1974, Massachusetts cities and towns changed from a calendar year to a July 1 to June 30 fiscal year.

[b] Total amount paid by the state to cities and towns as aid or reimbursements. Commonly referred as "cherry sheet" aid, it excludes direct aid to regional school districts.

[c] Calculated as an annual rate over the 18 month period January 1, 1974 to June 30, 1975.

Source: Massachusetts Taxpayers Founation, Municipal Financial Data, Including 1981 Tax Rates. Change in state aid figures compiled by the Massachusetts Senate Ways and Means Committee, 1980.

followed by additional aid for the county court system in 1979 and state takeover of expenditure responsibility for the courts in 1980. Working in the other direction during the mid-1970s, the state mandated a variety of programs, especially in the areas of special and bilingual education, for which the local governments ended up paying substantial shares of the costs out of local property taxes. Finally, the state provided additional school aid in 1979 and revised the school aid distribution formula to make it more equalizing.

In spite of these state policies, property taxes continued to rise. Only with the 4 percent tax-cap legislation of 1979 was their growth temporarily halted. The 4 percent limit applied to both taxes and appropriations for fiscal years 1980 and 1981. Partly because of the cap and partly because of increased state aid and the use of local cash reserves, property taxes in Massachusetts actually declined in 1980 for the first time in several decades. The following year, however, property taxes increased by the largest amount in four years. Expenditures included in the cap increased by 6.3 percent, as communities routinely took advantage of the law's override provision. Virtually no new state aid, increased assessments on cities and towns to support county and regional authorities, and depleted cash reserves all contributed to communities' decisions to override the cap.

Thus, state policies, including the 1979 state tax cap law, have not been sufficient to reduce Massachusetts' property tax burdens. As pointed out above, the state government should not be faulted on the expenditure side: The local share of state and local spending is lower in Massachusetts than elsewhere. With respect to the revenue side, however, we restate our earlier conclusion that property taxes are high in Massachusetts because

property taxes account for a substantially higher proportion of local revenues in Massachuestts than elsewhere.

III. Aggregate Effects of Proposition 2-1/2

The correct way to measure the revenue impact of Proposition 2-1/2 is to use the difference between revenues allowed with the law and those that would have been raised without the law. In most of this paper, however, we measure losses as the difference between the revenues in the year before Proposition 2-1/2 and those allowed after Proposition 2-1/2. This approach is flawed in two ways. Even as a measure of the required change from one year to the next, it understates the magnitude of the required adjustment because of inflation. Second, it understates the impact unless no revenue growth would have occurred in the absence of Proposition 2-1/2. The advantage of this method is that it requires no arbitrary assumption about how fast revenues would have grown in the absence of the limitation measure. At the same time, the direction of the bias is clear; in all cases our reported results understate revenue losses. This downward bias can be dramatic under reasonable assumptions.[9]

First Year Losses in Local Tax Revenues

The estimate of the first year revenue losses (or gains) from Proposition 2-1/2 used here is the difference between fiscal year 1981 (FY81) actual tax revenues and those permitted in FY82.[10] The property tax increases allowed in low tax rate communities are treated as revenue gains even though the permitted 2-1/2 percent growth is likely to be less than the growth that would have occurred without Proposition 2-1/2. However, the

loss of motor vehicle excise (MVE) revenues means that all cities and towns face absolute reductions in tax revenues in FY82.

As of the beginning of the FY82 (July 1, 1981), the Massachusetts Department of Revenue estimated that Proposition 2-1/2 would reduce FY82 local tax revenues by a total of $486 million compared to fiscal year 1981. This represents about a 14 percent reduction in total tax revenues. The total net reduction is divided between changes in property tax and MVE revenues as follows:

Property tax levies	
Allowable increases (169 communities)	16,292,732
Required decreases (182 communities)	-357,260,189
Net change in property tax levies	-340,967,457
Motor vehicle excise revenues	-145,249,603
Total change in tax revenues	-486,217,060

Although MVE revenues represent only a small portion of local tax revenues (about 6.5 percent in 1981), the size of the decrease in the MVE rate -- 62 percent -- makes the reduction of MVE revenues an important component of the first year revenue losses caused by Proposition 2-1/2. The estimated net property tax loss of $341 million is about 10 percent of the $3,346 million total property taxes levied in fiscal year 1981.

The greatest uncertainty in estimating revenue losses and gains arises from Proposition 2-1/2's use of "full and fair cash value" of taxable property to define the maximum allowable tax rate. This creates uncertainty because in 1981 only 98 of Massachusetts' 351 cities and towns were in compliance with the ruling of a 1974 court case requiring assessment at 100

percent of market value. The other 253 cities and towns were scheduled to complete revaluations during 1982 and 1983.

For purposes of Proposition 2-1/2, the Department of Revenue (DPR) defined full and fair cash value for FY82 as a city or town's state-determined 1980 equalized valuation adjusted upward by a uniform 13 percent for inflation and by additional amounts for demonstrated growth in a community's tax base. In addition, the DOR gave communities that had revalued in 1981 the option of updating their 1981 assessments to bring them in line with 1982 values, and gave communities that were in the process of revaluing, the option of using their 1982 revaluation figures if they could complete the revaluation and have it certified by February 1982.

Because the state's equalized valuation figures, even after the 13 percent inflation adjustment, typically understate a community's true valuation, many communities that fought revaluation in the past now have an incentive to revalue and to update valuations to minimize the revenue losses mandated by the tax limitation measure.[11] This impact on property tax administration -- though not fully anticipated -- may be one of the most important effects of Proposition 2-1/2. At the same time, we note that the 2-1/2 percent limit on the annual growth of tax levies that applied once the tax rate is at 2-1/2 percent means that Proposition 2-1/2 provides little incentive for low tax rate communities to update their assessments or for other communities to update their assessments in the future.

The July estimates reported above incorporate reasonable assumption about the effects of these options, but probably overstate the required first year revenue losses in some communities, especially those implementing 1982 revaluations.[12]

State Government Response

Proposition 2-1/2 says very little about state government spending and taxes.[13] In particular, it did not require the state to offset local tax losses with new state aid. In response to pressure from local government officials and after 6-1/2 months of bitter debate, however, the legislature increased the amount of aid distributed to local governments in 1982 by $265 million over its 1981 level.

Unlike California at the time Proposition 13 passed, Massachusetts essentially had no state surplus. This fact, combined with the reluctance of legislators to raise state taxes in the aftermath of an overwhelming vote for local tax reduction, left cuts in state spending as the only source of revenue for new local aid. Thus, the legislative debate on new state aid was a debate over how the revenue reductions mandated by Proposition 2-1/2 should be allocated between the state and local governments. Table 4 summarizes the various requests and proposals for increased state aid to local governments. The key short run issues were: 1) how much new local aid to provide; 2) how to finance it; and 3) how to distribute it.[14]

At one extreme, the "Share the Pain" bill, which was supported by the House Chairman of the Joint Taxation Committee and all the groups representing local governments, called for $360 million in new state aid. Based on the view that the state had an obligation to help the cities and towns, this bill would have distributed new aid in proportion to the first year loss in tax revenues caused by Proposition 2-1/2. At the other extreme was Governor King's initial budget proposal for only $37.6 million in new aid. This budget proposal was explicitly based on the view that the vote for Proposition 2-1/2 was a reaction to the problems of local government and did not obligate the state government in any way. A May 1981 revision of the Governor's

TABLE 4

PROPOSED INCREASES IN LOCAL AID - FY1982

(Compared to fiscal year 1981)

Proposal	Additional Local Aid (millions of dollars)	Major source of funds	Distribution of new aid[a]
"Share the Pain Bill" (December 1980)	360.0	Growth in state tax revenues and freeze on state spending.	In proportion to the loss in revenues caused by Proposition 2-1/2.
Governor King's initial budget (January 1981)	37.6	$16 million from new lottery revenues.	$16 million by lottery formula, remainder from reimbursements.
"The Better Budget" (March 1981)			
Governor's initial budget	37.6	(see above)	(see above)
Additional	292.4	Reductions in administrative accounts and improved control over state spending.	1/2 by school aid formula and 1/2 by lottery formula.
Total	330.0		
Governor's Revised Budget (May 1981)			
Governor's initial budget	37.6	(see above)	(see above)
Additional	158.0	State spending reductions, primarily in human services budgets.[b]	Not specified, $38 million possibly for state takeover of county jails.
Total	195.6		

TABLE 4 (cont.)

Proposal	Additional Local Aid (millions of dollars)	Major source of funds	Distribution of new aid[a]
House Ways and Means Committee Budget (Revised) (May 1981)	201.6	Cutbacks in human services, state bureaucracy, and higher estimated revenues[c]	$120 million using lottery formula, $60 million per capita, $21 million in public school transportation, and $600,000 for police career incentive programs
Senate Ways and Means Committee Budget (June 1981)	303.0	Major cuts in the state bureaucracy including elimination of 32 agencies and 3809 jobs and cuts in all areas of the budget	$136 million by lottery formula, $99 million in proportion to Proposition 2 1/2 revenue losses, and $68 million using 7 individual grant formulas.
Final Budget (July 1981)	265.0	Similar to budget passed by the Senate	$221 million using the lottery formula, $20 million under a school transportation formula and the remainder in other ways

a. The two main distribution formulas currently in use are the lottery formula and the school aid formula. The lottery formula distributes money inversely to per capita property valuation (as equalized by the State Department of Revenue). The school aid formula is a foundation plan based on equalized valuation per capita, weighted pupils, and statewide average school spending per pupil.

b. Human service cuts account for $158 million of the $208 million total proposed budget cuts in the revised budget.

c. The original House Ways and Means Committee Budget relied more heavily on human service reductions than does the revised proposal. The revised budget restored $55 million for human services by cutting 1873 middle managers in state government to save $35 million, and making $20 million of cuts in insurance, reserve, and maintenance accounts. The revenue estimates in the House Ways and Means proposal exceed Governor King's estimates by $84 million.

SOURCES: Budget and related House documents (House Nos. 1, 3304, 6794, 6800), "The Better Budget FY 1982" (March 27, 1981), and newspaper accounts.

budget pleased local government officials but angered human service supporters; $158 million in additional aid was to be financed primarily by reducing spending on human services.

The final local aid increase of $265 million represented a compromise between the Governor, the House, and the Senate and required large-scale cuts in state government agencies and employees. With the focus of the debate on the amount of new aid and the source of funds, the problem of distributing the new state aid was virtually ignored. The decision to distribute $221 million using an existing equalizing formula with none distributed in line with first year revenue losses was a last minute decision by the House-Senate conferees. The implication of this decision will be discussed further below.

State and Local Government Shares

The immediate effect of Proposition 2-1/2 is to reduce the share of state and local taxes collected at the local level. Based on the Department of Revenue July estimates of FY82 local tax reductions and on state taxes as shown in the 1982 state budget, we calculate that local taxes in Massachusetts will be reduced to 40.7 percent of total state and local tax revenues in fiscal year 1982.

Table 5 compares this percentage to previous Massachusetts experience and to the experiences in the United States as a whole and in California. In all three areas the local share of taxes has been falling over time, although, especially in Massachusetts, the decline has been erratic. The first year impact of Propostion 2-1/2 is to reduce the local percentage by over 5 percentage points, bringing it closer to the U.S. average. This is a large drop in relation to previous yearly changes, but small in relation to the dramatic first year reduction experienced in California in 1970, the

TABLE 5

LOCAL TAXES AS PERCENTAGE OF STATE AND LOCAL TAXES

Fiscal Year	Massachusetts	California	United States
1965	58.2%	53.4%	49.0%
1970	50.7	50.7	44.7
1975	53.2	48.0	43.3
1976	48.0	48.1	43.1
1977	49.3	47.2	42.5
1978	49.1	45.1	41.5
1979	46.7	31.9	39.3
1980	44.9	30.2	38.7
1981	46.0	n.a.	n.a.
1982	40.7	n.a.	n.a.

n.a. = not available.

Source: U.S. Bureau of the Census, Governmental Finances, annual issues. Massachusetts data for 1981 from Massachusetts Taxpayers' Foundation, State Budget Trends 1973-1982, p.6. Massachusetts share for 1982 estimated by the authors with data from the Massachusetts Department of Revenue and the 1982 State Budget.

first year after Proposition 13 rolled back local property taxes to 1 percent of 1975 market values. This difference between Massachusetts and California largely reflects the phasing in of Proposition 2-1/2. Additional reductions are likely in future years as state income and sales tax revenues grow with inflation and local property taxes are reduced further in some communities and rise at a maximum rate of 2-1/2 percent per year in others.

Without new state aid and ignoring all other nontax revenue changes between FY81 and FY82, Proposition 2-1/2 would have lowered the absolute level of local spending by approximately 8 percent. The effects of this spending reduction on the local share of total state and local spending are estimated by altering the FY80 ratio of local to state and local direct general expenditures to reflect what would have happened if the proportional local revenue reductions required by Proposition 2-1/2 had taken place in 1980 with no other changes (including no changes in federal aid and no growth in user charges and fees). As shown in Table 6, the local share of expenditures was 55.4 percent in FY80, the latest year for which Census data are available. Our estimates indicate the revenue provisions of Proposition 2-1/2 reduce the local share of spending to 53.4 percent.

To incorporate the effects on the local spending share of the new state aid induced by the pressures of Proposition 2-1/2, we define new aid as the total $265 million increase minus the $38 million proposed by the Governor in his initial budget. That is, we view the $38 million as aid that would have been provided even in the absence of Proposition 2-1/2. With this $227 million in new state aid, Proposition 2-1/2 raises the local spending share slightly to 55.5 percent. The share rises with the new state aid because the state absorbs a slightly larger portion of the revenue reduction ($227

TABLE 6

SIMULATIONS OF EFFECTS OF PROPOSITION 2-1/2
ON MASSACHUSETTS STATE-LOCAL SPENDING SHARES AND REVENUE SHARES

Spending and Revenue Shares[b]	1980 Value	Adjusted for local tax effects of Proposition 2-1/2	Adjusted for local tax effects and new state aid[a]
Local direct general expenditure as percentage of state and local direct general expenditure	55.4%	53.4%	55.5%
Property taxes as percentage of local general revenues	49.5	45.8	39.5
State aid as percentage of local general revenues	27.8	29.8	32.1

a. New state aid refers to the aid induced by Proposition 2-1/2. In 1982, this is the additional aid of $265 million minus the $38 million initially proposed by Governor King.

b. Comparable shares for the United States as a whole in 1980 are shown in Tables 1 and 2.

million divided by $486 million = 47 percent) than its share of total spending before proposition 2-1/2 (45 percent).

Although it may be tempting to conclude from this that the state absorbed more than its share of the required spending reduction, we believe this conclusion is unwarranted. As shown in Table 2 and repeated in Table 6, property taxes (including MVE revenues) accounted for 49.5 percent of local general revenues in FY80. Table 6 shows that the tax effects of Proposition 2-1/2 reduce this percentage to 45.8 percent. By augmenting local revenues, state aid reduces this ratio further but only to 39.5 percent, a percentage still well above the United States average of 28.2 percent. An alternative strategy for reducing this imbalance in the mix of local revenues would have been to enable Massachusetts communities to levy other broad-based local taxes such as income and sales taxes. However, since municipal governments in Massachusetts are, in general, too small and fragmented to avoid the most adverse effects of local sales or income taxes, not only was new state aid an appropriate response to the first year pressures of Proposition 2-1/2 but even more state aid might have been desirable.[15]

IV. Impacts of Proposition 2-1/2 across Cities and Towns

The 351 cities and towns in Massachusetts vary widely in revenue-raising ability, spending levels, and tax rates. For example, taxable property per capita ranged from $6,000 to $126,000 in 1981; total spending (including that for schools) by municipal government ranged from a low of $300 per capita to a high of $1,900; and effective property tax rates ranged from 0.6 percent to 10 percent.[16] This diversity means that Proposition 2-1/2 had

widely varying first year effects on individual cities and towns. Proposition 2-1/2 required communities with effective tax rates above 2-1/2 percent to reduce property tax levies by enough to reach the 2-1/2 percent limit or by 15 percent; low tax rate communities could raise levies by only 2-1/2 percent.[17] This section, which examines the magnitudes across communities of these first year tax reductions, begins with an examination of the sources of the wide variation in pre-Proposition 2-1/2 tax rates.

Table 7 groups Massachusetts cities and towns into population size categories, after eliminating the 15 towns with population under 500. The data show that larger cities and towns had higher tax rates, on average, than smaller ones. The range between the group average tax rates shown in Table 7 is quite wide: with an average tax rate of 2.35 percent, the 110 towns with population under 5000 were 21 percent below the typical community, while the largest cities' and towns' average rate of 5.09 percent was 70 percent above that of the typical community and more than twice that of the small towns. The average municipality had a 3 percent property tax rate, but because so many more people live in the larger (higher tax rate) communities than in the smaller towns, the average resident in the state faced a property tax rate of 4.4 percent.[18]

The table includes two measures of per capita spending, gross expenditures and nonfixed local expenditures. The former includes all financial commitments of the city or town for FY 81 including local school spending and/or each municipality's share of a regional school district's spending. Any of these commitments not financed out of fees and charges, intergovernmental aid, or motor vehicle excise revenues must be financed out of the property tax levy. Nonfixed local expenditures exclude state and county assessments (for example, for the regional transit authority in the Boston

TABLE 7

Fiscal Year 1981 Tax and Spending Characteristics of Cities and Towns[a]

Population Group	Number of cities and towns	1980 population[b]	Percent of state total 1980 population	Effective tax rate	Equalized valuation[c] per capita	Gross expenditures per capita	Non-fixed local expenditures per capita	Property tax levy per capita	Property taxes as percent of gross expenditures	State aid per capita[d]
5,000 or less	110	2,222	4.3%	2.35%	$24,892	$ 802	$709	$508	63.2%	125
5,001-10,000	75	6,930	9.1	2.80	20,366	815	715	504	61.3	139
10,001-25,000	91	16,001	25.5	3.17	17,744	884	759	539	60.3	164
25,001-50,000	39	33,625	22.9	3.63	17,206	949	771	577	61.0	159
50,001 or more	21	104,138	38.2	5.09	11,865	1,019	803	578	56.1	229
Statewide Total	336	5,718,720	100.0	...	...	...	...	...	...	...
Average city or town	...	17,020	...	2.99	20,239	858	737	528	61.3	149
Average resident	...	94,563	...	4.42	15,352	992	805	584	58.7	199

[a] The 15 towns with population under 500 were excluded. The total 1980 population in these towns is 4,582, which is .08 percent of the state population.

[b] All table entries except column 1 and "Average resident" row are simple unweighted averages for all cities and towns in the group.

[c] Department of Revenue estimate of market value of taxable property.

[d] Total amount estimated to be paid to city or town in state distributions and reimbursements (shown on "cherry sheets"). These amounts do not include aid paid directly to regional school districts.

area), pension payments, and debt service expenditures, and hence provide a better measure of the spending that can be cut by the community in the short run.

It is apparent from Table 7 that small tax bases contribute more than high spending levels to the high tax rates of the largest cities and towns. The smallest towns taxed themselves on average at a rate below 2-1/2 percent in fiscal year 1981, and raised $508 per capita, on average. Their revenue-raising disadvantage was partially offset by higher state aid and other nontax revenues. Thus, in order to spend about 27 percent more than the smallest cities and towns, the largest communities taxed themselves about twice as heavily. This seems to run counter to the popular impression and the argument made during the debate prior to the 2-1/2 vote that excessive spending was the basic cause of high property tax rates. The data imply that while higher spending in large communities may play some role, it is not the major contributor to the high average tax rates in these communities.

Patterns of First Year Revenue Losses before New Aid

About 182 of the 351 cities and towns were required to reduce property taxes to bring them down toward their tax rate limit. Communities with tax rates below the limit were allowed to raise tax levies but only by 2-1/2 percent. In addition, all communities lost revenue from the statewide reduction of the motor vehicle excise (MVE) rate from 6.6 to 2-1/2 percent. When these changes are combined, all the cities and towns faced absolute tax revenue reductions in FY82.

Table 8 shows these first year revenue losses for the five population groups of cities and towns, where losses are defined as the difference between tax revenues permitted under Proposition 2-1/2 in FY82 and actual

TABLE 8

Revenue Changes Mandated by Proposition 2 1/2[a]

Population Group	Percent change in property tax levy	Change in motor vehicle excise revenues per capita	Total change in tax revenue (before new aid) as percent of		Change in revenue net of new EMG[b] as percent of	
			gross expenditures	nonfixed expenditures	gross expenditures	nonfixed expenditures
5,000 or less	-1.5%	-$28.4	-4.7%	-5.3%	-1.5%	-1.7%
5,001-10,000	-2.5	-28.7	-5.2	-5.9	-1.5	-1.7
10,001-25,000	-5.9	-29.1	-6.9	-8.1	-3.4	-4.0
25,001-50,000	-9.0	-27.6	-8.4	-10.5	-5.0	-6.3
50,001 or more	-14.9	-21.9	-10.5	-13.4	-6.1	-7.8
Average city or town	-4.6	-28.2	-6.2	-7.3	-2.7	-3.3
Average resident	-9.9	-25.4	-8.4	-10.5	-4.5	-5.7

[a] Change is measured as difference between allowed FY82 revenues and actual FY81 revenues.
[b] EMG is the equalizing municipal grant.

tax revenues in FY81. As shown in column 1, the average required property tax reductions range from 1.5 percent in the smallest towns, which typically had low tax rates, to 14.9 percent in the largest communities, all of which had FY81 tax rates well above 2-1/2 percent. Because MVE revenues were reduced by 62 percent statewide, the per capita changes shown in column 2 vary only slightly over the groups and reflect variations in the ratio of auto registration to population. Smaller towns' losses resulted mostly from motor vehicle excise cuts while the losses of the biggest cities and towns were largely attributable to property tax rate reductions.[19]

Two qualifications should be noted. First, and most important, the losses reported here simply represent reductions in the tax revenues from one year to the next, rather than the difference between FY82 permitted tax revenues and what tax revenues would have been in FY82 in the absence of Proposition 2-1/2. Thus, the reported losses understate the full effects of the limitation unless tax revenues would have remained constant, with the extent of the understatement for any type of community depending on how much property tax levies would have increased without the tax limitation measure. Second, the reported losses are only estimates; they are based on assumptions about 1982 property valuations made by the Department of Revenue in July 1981. Because some communities are still in the process of determining their 1982 valuations, actual revenue losses are still unknown.

Taken by themselves, the tax reductions shown in columns 1 and 2 of Table 8 benefit local taxpayers, with taxpayers in large communities benefiting more on average than those in small communities. At the same time, however, local tax reductions may lead to cuts in local public services. Column 3, which shows the combined property tax and motor vehicle reductions as a fraction of FY81 gross expenditures, indicates percentages by which

communities would have had to cut spending in the absence of any new state aid or other revenue changes. The spending impacts are large: the average percentage reductions range from almost 5 percent to over 10 percent across groups and the average resident lives in a community facing revenue losses equal to 8.4 percent of gross expenditures. Because not all expenditures can be cut in the short run, revenue losses as a fraction of nonfixed expenditures (shown in column 4) provide a better indication of the cuts in operating expenditures required by the revenue provisions of Proposition 2-1/2. The group average reductions ranged from 5 to 13 percent, and individual town or city losses range from under 1 to 19 percent. Notably, all but one of the population groups show virtually this full range. The exception is the group of largest cities and towns, none of which have revenue losses that are less than 10 percent of FY81 expenditures.

Table 9 groups the cities and towns by the size of the Proposition 2-1/2 revenue losses as a fraction of FY81 budgets (before new state aid). Because some small and medium-sized as well as large communities faced large revenue losses, the patterns shown in Table 9 run counter to the popular view that most of the communities hit hardest by Proposition 2-1/2 were large cities with low incomes, high tax rates, and high spending. The cities and towns with the greatest first year revenue losses -- 12 percent and over -- had moderately high incomes, property values, tax rates and spending; Proposition 2-1/2 hit these communities the hardest because they were most dependent of all the groups on property taxes and the motor vehicle excise for revenue, as shown in column 7. The two groups with the smallest revenue losses (0-3 and 3-7 percent) were also heavily dependent on property tax and motor vehicle excise revenues, but because they had higher property valuations, their tax rates were lower, leaving them less con-

TABLE 9

Fiscal Characteristics of Cities and Towns by Revenue Loss

Revenue Loss Group[a]	Number of cities and towns (cities)	Percent of state total 1980 population	FY81 effective tax rate	FY81 equalized valuation per capita	1975 per capita income	FY81 gross expenditures per capita	FY81 property tax and motor vehicle excise as % of gross expenditures	New state aid as % of tax revenue loss
0-3% loss	131 (1)	18.3%	2.39%	$26,415	$5140	$891	68.1%	144%
3-7% loss	70 (2)	11.3	2.63	19,478	4830	778	67.1	94
7-10% loss	34 (13)	22.5	3.75	13,054	4598	866	59.9	53
10-12% loss	51 (14)	29.5	4.00	13,681	4635	863	63.9	39
12% or greater loss	50 (9)	18.4	3.53	16,700	4898	871	71.4	26

[a] The measure of revenue loss is the difference between allowed FY82 revenues and actual FY81 revenues as a percent of gross expenditures, before new state aid.

strained by the 2-1/2 percent limitation. At the extreme, the communities in the group least hard hit by Proposition 2-1/2 were the richest (in terms of equalized valuation or income per capita), on average, which allowed them to finance average FY81 spending levels higher than any other group with average tax rates below 2-1/2 percent.

Somewhat surprisingly, it is the municipalities with revenue losses between 7 and 12 percent of 1981 expenditures rather than those with losses over 12 percent that have the lowest incomes and property values and the highest property tax rates. This reflects the fact that a greater share of the expenditures of these communities were financed with nontax revenues than was the case for the highest loss communities.

One of the most striking characteristics of all these groupings, however, is the wide range of income levels, per capita valuations, and spending levels around the group averages shown in the table. In particular, high and low spending communities are scattered throughout the range of losses.

Determining whether the net effects of large tax savings and large impacts on local budgets are harmful or beneficial to the residents of a particular community raises complex and difficult questions beyond the scope of this study. The evaluation depends in part on the extent to which spending reductions lead to efficiency gains rather than service reductions, how much people value the tax cuts relative to service cuts, and who is affected by service cuts. Because large expenditure reductions are likely to be more distruptive than small reductions, however, it seems appropriate that they be partially offset by new state aid.

Effects of New State Aid on Revenue Losses

New state aid partially offsets the effects of the first year tax losses

on local spending. Most of the new aid was distributed using the Equalizing Municipal Grant (EMG) formula, which allocates aid in direct proportion to population and in inverse proportion to per capita equalized valuation.[20] Columns 5 and 6 of Table 8 show the effects of this new state aid on average revenue losses expressed as percentages of the two spending measures for each group of communities. The new aid substantially alleviated the first year spending impacts of Proposition 2-1/2 in all cities and towns, but more so in smaller than in larger communities. Thus, after new state aid, average revenue losses range from 1.7 percent to 7.8 percent in FY81 nonfixed spending across population groups in contrast to the 5.3 to 13.4 percent range of losses before the new aid.

The EMG has been criticized as not meeting one major goal of new state aid for FY82, that of "cushioning" the impact of Proposition 2-1/2 on local budgets. An earlier proposal -- embodied in the "Share the Pain" bill -- would have directly addressed the "cushioning" goal by replacing approximately half the revenue loss of each community. As a one year program, this "half-gap" aid would have given cities and towns more time to adjust to Proposition 2-1/2's limits. This form of aid -- i.e., aid to offset a determinate fraction of each local government's revenue loss -- was also the approach taken by the California legislature in response to Proposition 13.

Column 1 of Table 10 shows the pattern of aid that results from offsetting exactly half the first year revenue loss of all communities. Because large communities on average faced larger tax losses as a fraction of spending than small communities, half-gap aid as a fraction of spending increases with community size. This approach is flawed, however, because it fails to address the possibility that the vote for Proposition 2-1/2 was a vote against "business as usual." By offsetting a constant proportion of

TABLE 10

Actual and Proposed New State Aid to Local Government

Population Group	New aid as percent of FY81 gross expenditures			New aid as a fraction of tax revenue loss		
	Half-gap	EMG	30-100	Half-gap	EMG (range)	30-100 (range)
5,000 or less	2.3%	3.2%	2.8%	0.50	1.04 (0.07-4.8)	0.77 (0.30-1.0)
5,001-10,000	2.6	3.7	3.2	0.50	1.03 (0.12-3.8)	0.78 (0.30-1.0)
10,001-25,000	3.5	3.5	3.4	0.50	0.87 (0.11-5.4)	0.64 0.30-1.0)
25,001-50,000	4.2	3.4	3.7	0.50	0.57 (0.13-2.1)	0.57 0.30-1.0)
50,001 or more	5.3	4.4	5.0	0.50	0.45 (0.13-1.1)	0.51 0.30-1.0)
Average city or town	3.1	3.5	3.3	0.50	0.90 (0.07-5.4)	0.70 (0.30-1.0)
Average resident	4.2	3.9	4.0	0.50	0.65 (0.07-5.4)	0.58 (0.30-1.0)
State total aid (millions of dollars)	$243.	$205.	$222.	$243	$205	$222

Note: See text for definitions. EMG is the equalizing municipal grant formula used to distribute the actual new state aid.

first-year revenue losses, half-gap aid maintains pre-Proposition 2-1/2 spending disparities. To the extent that some of the spending differences reflect governmental inefficiency and waste, an aid program that allows such differences to continue -- after a public vote that to many was a vote for more efficient government -- seems undesirable.[21]

By distributing per capita aid inversely with per capita equalized valuation, the EMG formula favors communities with small per capita tax bases. As shown in column 2 of Table 10, the $205 million[22] of new aid distributed under this formula is a higher proportion of gross expenditures in large communities than in small, although the differences across groups are not as great as they are with half-gap aid. This distribution, however, ignores the "cushioning" goal; column 5 shows that, on average, small communities received more state aid than they lost in revenue while the largest cities and towns received state aid equal, on average, to 45 percent of their revenue losses. These averages conceal even greater variations across individual communities. Some communities, for example, received new aid that was five times larger than their first year revenue losses while others received less than 15 percent of their first year revenue losses. On average, the biggest losers (those with tax revenue losses greater than 12 percent of gross expenditures) received aid equal to only 26 percent of their losses, while those with the smallest losses (0 to 3 percent) received more aid than the revenues they lost, resulting in a 144 percent average replacement rate (see final column of Table 9).

A third aid formula incorporates elements of both these two types of new state aid. It starts with the EMG formula, but then takes account of the size of the revenue loss by setting the minimum amount of aid at 30 percent and the maximum amount at 100 percent of a city or town's first year revenue

loss under Proposition 2-1/2. We refer to this as 30-100 aid. The $222 million that would have been distributed according to this formula under an amendment passed by the House in the fall of 1981 (but not enacted) has the characteristics shown in columns 3 and 6 of Table 4.[23] It offset the most undesirable first-year effects of the EMG distribution and at the same time preserves the EMG formula's basic equalizing feature. For example, it would raise to one third the average replacement for cities and towns with losses over 12 percent, and reduce the aid provided to cities and towns with losses under 3 percent to 91 percent of their losses, on average. It would also increase the average aid going to cities and towns with losses of 7 to 12 percent. Because it would have cushioned the first year budget adjustments more evenly across communities, this 30-100 aid would have been preferable to the EMG distribution that was actually used.

Long Run Effects of Proposition 2-1/2 and the Need for a New State Aid Formula

About 40 of the larger cities and towns will be required to reduce property tax levies up to 15 percent more in the second year of Proposition 2-1/2 and some of these may be required to make additional cuts in the following year.[24] Even those communities facing no further reductions, however, will continue to be affected by the tax limitation measure. In an inflationary period, the 2-1/2 percent limit on the annual growth of levies assures that the gap between actual revenues and what revenues would have been without Proposition 2-1/2 will continue to widen. Moreover, this growth limit provision implies that once effective tax rates are reduced to 2-1/2 percent, they will continue to fall -- provided only that taxable property values grow at more than 2-1/2 percent per year. Aside from possible overrides (discussed below) the only exception to the 2-1/2 percent

growth limit are new development or property renovation or rehabilitation adding more than 50 percent to a property's value. With such development, the municipality can exempt from the limit revenues equal to the previous year's tax rate multiplied by the incremental value of the property.

Proposition 2-1/2 has major implications for the long run pattern of spending across communities. Before Proposition 2-1/2, differences in discretionary spending across jurisdictions reflected differences in service costs or needs, preferences for public services, and efficiency. Importantly, resource poor communities were allowed to tax themselves more heavily than others to support desired expenditures. Proposition 2-1/2 changes this by equalizing tax rates across jurisdictions. In the absence of overrides, the reduction of high tax rates to 2-1/2 percent would result in local tax revenues that vary across communities directly in line with local tax bases.[25] The wide divergence in tax bases shown in Table 7 illustrates the significance of this outcome: large, low base communities will end up with per capita property tax revenues half the size of those in small, high base communities. The current distribution of state and federal aid alleviates the harshness of this outcome somewhat, since it is equalizing in the aggregate, that is, communities with less ability to raise their own revenues receive more intergovernmental transfers. But the costs of providing basic local government services (e.g., police, fire, schools) do not vary in proportion to local tax resources, even as augmented with intergovernmental transfers. Thus cities and towns with smaller per capita tax bases would be forced to provide fewer or lower quality services to their residents.

Needs for local government services and the costs of providing them vary across cities and towns for a number of reasons.[26] For example, some places

have more school age children or more miles of locally maintained and locally policed roads or more properties to protect from fire than others; some areas have commuters as well as local residents using their services; some areas have more densely developed or older residential and commercial structures that make fire prevention and fire protection more costly per acre or per capita than in newer spread-out residential towns. Some of these cost differences imply that low base areas not only are less able to raise any given revenue amount per capita, but also are likely to be high need areas, that is, areas that face higher costs per capita to provide any given level of services.

Legislative amendments enacted at the end of the 1981 session changed the override provisions of Proposition 2-1/2 to allow individual places to ease the tax rate restriction on a year-by-year basis.[27] This brings relief on the service provision side: low base/hign needs areas can again tax themselves more heavily to provide needed services. But the underlying problem will remain: Just as before Proposition 2-1/2, it is the most fiscally strained places that will end up with the highest tax rates. Significantly, most of the 40 cities and towns facing possible second year cuts had FY81 per capita property valuations well below the overall average.

Proposition 2-1/2 attacks but does not directly remedy the fundamental problem of Massachusetts local government finances: Excessive reliance on one revenue source -- property taxes. To minimize the adverse long-run effects of the proposition, the state should set up a guaranteed revenue sharing program for future years with the funds distributed to local communities inversely to local resources and directly with service "needs."[28] The FMG formula, used for first-year aid, is a start in this direction but not complete; it equalizes across tax base differences but implicitly

assumes that "needs" are proportional to population. A revenue sharing plan that balanced needs and resources would allow local governments to retain some discretion in choosing levels of individual services to reflect local preferences[29] and would maintain the incentive for all cities and towns to spend as efficiently as possible. At the same time, it could give all communities access to resources sufficient to provide their residents a reasonable level of local public sector services.

V. Impacts on School Budgets

Proposition 2-1/2 has potentially important implications for spending on elementary and secondary education. Because school spending accounts for over half the budget in many Massachusetts communities, it is difficult for cities and towns to make substantial reductions in overall budgets without making comparable reductions in school budgets. In addition, because Proposition 2-1/2 ended the fiscal autonomy of school committees by making their budgets subject to the will of the town or city legislative body, supporters of education spending feared that school spending might bear more than its share of the burden of local revenue reductions.

In order to examine the effect of Proposition 2-1/2 on school budgets, we use responses by school committees in 132 cities and towns to a survey conducted by the Massachusetts Department of Education in June 1981. These 132 cities and towns comprise 44 percent of the state's 297 cities and towns with operating school systems and appear to be representative of the state's nonregional schools systems except for the biggest cities.[30] The June 1981 survey date means that in some cases the FY82 budgets reported by the school committees had not yet been approved by the local legislative body[31] and there was uncertainty about the amount and distribution of new state aid.

Size of School Budget Cuts

Table 11 presents 1982 school budget data on the 132 communities for which we have survey responses. Columns 1 and 2 show how the sample is distributed among the same five population size categories used in earlier tables and reports the average number of pupils in the sample communities by category. Column 3 shows that the percentage by which preliminary 1982 school committee budgets fall below 1981 budgets varies from 3.7 percent in the smallest communities to 9.6 percent in cities and towns with populations between 25,000 and 50,000.

A comparison of column 3 with column 4 indicates that for all population groups the average percentage reduction in school budgets is substantially larger than the average percentage reduction in nonfixed municipal expenditures (including schools) resulting from the Proposition 2-1/2 loss in revenues after new state aid.[32] Thus, unless the preliminary school budgets were changed dramatically in response to the new state aid, school spending was apparently disproportionately affected by Proposition 2-1/2.

This outcome is partially explained by the trends shown in columns 5-8. During the five year period 1975-80, per pupil education expenditures in our typical sample community grew by 58.4 percent, or about 14 percent after correcting for inflation.[33] For the state as a whole, local school expenditures per public school enrollee increased in nominal terms by 64 percent while local government expenditures per capita for all nonschool purposes grew by 50 percent between 1975 and 1980.[34]

This more rapid growth in school spending provides some support for the view that larger proportionate cutbacks could be made in school spending than in other categories. Rapid growth, however, need not imply excessive

TABLE 11

Impacts on Preliminary School Budgets[a]

Population Group:	Sample Size	District pupils[b] 1980	Percent change in school committee budget FY81-FY82	Municipal revenue loss after new state aid as percent of nonfixed expenditures	5 year percent change in per pupil expenditures[c] 1975-80	Expenditures per weighted pupil[d] 1980	5 year percent change in students[e] 1975-80	10 year percent change in population[f] 1970-80
5000 or less	38	308	-3.7%	-0.8%	61.4%	$2154	-3.7%	33.5%
5001-10,000	30	1269	-4.7	-1.5	54.2	1731	-8.1	15.9
10,001-25,000	42	2959	-6.8	-3.0	56.0	1900	-9.3	11.0
25,001-50,000	16	6135	-9.6	-5.9	61.3	1971	-15.7	-1.4
50,001 or more	6	11325	-9.2	-6.0	69.3	1791	-15.2	-5.5
Average sample community		2577	-5.9	-2.5	58.4	1938	-8.5	16.3

[a]The table is based on the 132 cities and towns for which we have data from the June 1981 survey of school committees by the Massachusetts Department of Education.

[b]Net average membership of students in the local school district excluding local students attending regional schools.

[c]The expenditure concept used for this calculation is average integrated cost. This includes expenditures made on behalf of all students in the city or town, including those attending regional schools. Source: Massachusetts Department of Education.

[d]See text for definition of weighted pupils. Expenditures exclude those made for students attending regional schools.

[e]Students are defined as net average membership and include local pupils attending regional schools. Source: Massachusetts Department of Education.

[f]Based on 1970 and 1980 Census of Population.

service levels. In table 11, service levels are measured by school expenditures per weighted pupil, where the pupil weights are Department of Education estimates of costs used in the current school aid formula.[35] For example, the six largest communities in the sample had below-average school expenditures per weighted pupil in 1980 (i.e., low service levels) in spite of the fact that they had the largest per pupil expenditure increase between 1975 and 1980. The real question is the extent to which the recent growth in school spending accurately reflects local preferences for education services and changing views about the education of special needs students.

In addition, if the trends shown in columns 8 and 9 for the historical period continue into the present, public school pupils are falling relative to the overall population in all population size categories. With this change in relative needs, a change in the mix of the total budget package away from education sperding may be appropriate. However, even if such an adjustment is called for in the long run, large cuts in a single year are likely to be disruptive.

Impact on Service Level Disparities

With many small school districts and relatively low state school aid, Massachusetts is characterized by wide variation in per pupil school spending across districts.[36] The impact of Proposition 2-1/2 on these interdistrict spending disparities can be seen in Table 12, which shows the percentage changes between 1981 and 1982 in total school budgets and instructional spending in the 132 sample communities grouped by 1980 service level. The groupings are quintiles of communities based on expenditures per weighted pupil.[37] Column 2 illustrates the wide variations in education service levels across jurisdictions. Average spending per weighted pupil in the high-service communities is about twice that in the low-service communities.

TABLE 12

Effects on School Committee Budgets - 132 Cities and Towns
by Service Level Categories

Service Level Group[a]	Communities in/Total Sample/Communities sample/total	FY80 Expenditures per weighted pupil FY81-FY82	Percent change in school budget FY81-FY82	Percent change in instructional spending FY81-FY82	Percent change in teachers
1 (low)	29/56	$1412/1411	-5.6%	-4.2%	-9.7%
2	27/56	1652/1645	-5.8	-6.5	-10.9
3 (middle)	22/56	1865/1864	-7.2	-6.3	-12.2
4	29/56	2080/2085	-5.9	-6.1	-8.9
5 (high)	25/56	2755/2709	-4.9	-4.2	-9.5
Average		1938/1943	-5.9	-5.5	-10.2
Number of observations	132/280	132/280	132	131	123

[a] Service levels are measured by FY80 expenditures per weighted pupil, where the weights are those used in the current school aid formula. The groups are quintiles of the 280 communities for which data were available on expenditures per weighted pupil.

Based on the average percentage changes in school budgets shown in column 3, we conclude that Proposition 2-1/2's initial impact is to increase somewhat the disparities in education service levels across cities and towns, especially at the upper end. In particular, communities spending the most per weighted pupil before Proposition 2-1/2 made the smallest cuts and communities in the middle service level quintile made the largest cuts in 1982 school budgets.

Columns 4 and 5 present estimates of changes in instructional spending and teachers from the same Department of Education survey. The patterns are basically the same as those for changes in total school committee budget, and strengthen the earlier conclusions that education cuts are substantial and that Proposition 2-1/2 makes the distribution of education services across jurisdictions more unequal than it was before the tax limitation measure was passed; on average, instructional expenditure and teacher reductions in low service communities exceed those in high service communities.

IV. Conclusion

This study has examined the size and distribution of local government revenue reductions required by Proposition 2-1/2. Measurements of impact were based on the limited data available one year after the Proposition's passage and halfway through its first fiscal year of implementation. Although the estimated revenue losses may differ from actual losses, especially as a result of revaluations recently or soon-to-be completed in some municipalities, they provide a useful description of the current situation and a starting point for policy debate.

The tax rate and levy growth limitation provisions of Proposition 2-1/2 reduced tax revenues available to every city and town in the Commonwealth in

FY82, but the impacts varied tremendously across cities and towns. After the first year, the highest tax rate cities and towns will have further required levy reductions, and all other communities will be constrained by Proposition 2-1/2's restriction of levy growth to 2-1/2 percent per year. In addition, currently planned cutbacks in federal aid will reduce the revenues of local governments, especially those of the larger cities and towns now most dependent on federal aid and also hardest hit by proposition 2-1/2.

This study has developed the argument that enactment of substantial new state aid is an appropriate response to the revenue losses of local governments because Massachusett's high property taxes before proposition 2-1/2 were mostly attributable to excessive reliance on property taxes as a local revenue source. The question of how that aid should be financed has not been addressed, but even as local revenue growth is constrained by Proposition 2-1/2, state revenue sources, most importantly income and sales taxes, will continue to increase with growth in the economy. Depending on the distribution formula used, new state aid may ease the short-term adjustment problems of hard-hit city and town governments, and may also offset the inherent long-run tendency of a tax rate limitation to widen spending disparities that result from unequal revenue-raising ability. The first year aid program enacted by the legislature, which uses the Equalizing Municipal Grant formula to distribute most of the aid, chooses the latter goal. A variant of that aid program (which we call 30-100 aid) would have balanced these two goals somewhat better for the first year.

In later years, some of the most undesirable long-run effects of Proposition 2-1/2 could be reduced by eliminating the 2-1/2 percent limitation on annual levy growth, substituting instead a permanent rate limit of 2-1/2

percent. This continuation of a tax rate limit rather than a levy growth limit would also maintain the incentive for cities and towns to update their assessments, one of the most favorable first-year effects of Proposition 2-1/2. A rate limit would also be more neutral than a levy growth limit with respect to changes in the overall inflation rate.

Additional state aid to local governments is also needed in future years. Ideally, the distribution of such aid across cities and towns would be responsive to interlocal variation in both services needs and taxable resources. Such equalizing aid would reduce the spending disparities caused by disparities in needs and revenue-raising capacity that existed before Proposition 2-1/2, and would also offset the worsening of spending disparities based on resource disparities that would otherwise occur under Proposition 2-1/2's uniform rate limitation.

FOOTNOTES

1. The Impact 2-1/2 Project at the Massachusetts Institute of Technology is currently monitoring these first year impacts.

2. We focus on these two characteristics because Proposition 2-1/2 deals directly with both. In addition, they are the two characteristics identified in a 1978 study that differentiated states imposing limits on local taxing and spending during the 1970-78 period from those that did not. See Helen F. Ladd, "An Economic Evaluation of State Limits on Local Taxing and Spending Powers," National Tax Journal XXX:1 (March 1978), pp. 1-28.

3. U.S. Department of Education, Digest of Education Statistics (year), annual issues. Data refer to expenditure per pupil in average daily attendance in public elementary and secondary schools.

4. For communities with 1979 full value tax rates below 2-1/2 percent, the 1979 rate becomes the maximum tax rate allowed under Proposition 2-1/2. Like the higher tax rate communities, these communities must reduce tax levies 15 percent per year until they reach their tax rate limit.

5. Proposition 2-1/2 also allows renters to deduct one-half of their rent payments from their taxable income for state income tax purposes. Included in the Proposition to attract the votes of renters, this provision has no direct impact on local government taxing and spending powers. A constitutional challenge to this provision was unsuccessful.

6. The motor vehicle excise in Massachusetts is included in the Census Bureau's definition of property taxes.

7. Before concluding that the solution to Massachusetts' property tax problems is to enable local communities to use other local tax sources, Massachusetts' fragmented governmental structure should be considered. Unlike other states which have successfully used local income or sales taxes at the county level, Massachusetts has no governmental jurisdictions with taxing powers that are sufficiently large to be suitable for local non-property taxes.

8. For example, see Robert W. Eisenmenger, Alicia H. Munnell, Joan T. Poskanzer, Richard F. Syron, and Steven J. Weiss, "Needed: A New Tax Structure for Massachusetts," New England Economic Review, May/June 1975, pp. 3-24, for a careful description of the problems resulting from Massachusetts' heavy reliance on the local property tax.

9. For example, suppose a specific community is required to reduce property taxes by 15 percent in the first year of Proposition 2-1/2 and thereafter may increase the levy by 2-1/2 percent annually. Suppose further that in the absence of Proposition 2-1/2, this community would have increased its property tax levy by 5 percent each year. Proposition 2-1/2 therefore reduces local property tax revenues by 10 percent

the first year, 21 percent the second, and 23 percent the third. The measure used in this paper, however, shows smaller losses -- decreasing rather than increasing over time -- of 15, 13, and 11 percent for the first 3 years.

10. We modify this procedure slightly for the motor vehicle excise reductions which went into effect on January 1, 1981, half-way through the 1981 fiscal year. Here the fiscal year 1982 revenue loss is defined in relation to 1980 calendar year revenues. Note that these estimates assume that the taxable base is the same after Proposition 2-1/2 as before. If people respond to the lower tax rate, however, by upgrading their automobiles, the taxable base will grow and our estimates of the before-after differences will be too high.

11. Public officials were reluctant to revalue because they had little to gain from doing so. Revaluation would bring dramatic shifts in property tax burdens, particularly away from business property onto residential property, but also across and within neighborhoods. In addition, revaluation could result in a loss of state aid. This occurred because the Department of Revenue typically underestimates true market valuation for communities assessing below 100 percent and consequently gives them more than their share of state aid distributions that vary inversely with estimated valuation.

12. The estimates assume that (1) communities wishing to update their 1981 valuations do so with a minimum increase of 13 percent over the 1981 valuations and (2) those communities scheduled to implement new revaluations in 1982 do so with a minimum additional increase of 10 percent over the preliminary inflation-adjusted estimate of full and fair cash value. The estimates are weakest for the 120 communities with populations over 500 that were scheduled to implement revaluation during FY82. Of the 120, 37 were scheduled for tax reductions between 0 and 15 percent; these reductions will be moderated if the certified revaluation figures exceed the Department of Revenue's estimates. Also among the cities and towns scheduled to revalue in FY82, 53 were scheduled for tax increases and 30 for cuts of the maximum 15 percent. Although revaluation could alter either of these groups' first year revenue changes, the impacts are likely to be small.

13. The only provisions affecting state spending and taxes are the rental deduction which reduces state income tax revenues and the requirement that the state finance any local programs it mandates that are not accepted by the cities and towns.

14. The debate on how much aid to provide took place at a time of uncertainty about the first year revenue losses under Proposition 2-1/2. Early estimates suggested the losses would be over $600 million, but part of this reflected the loss of MVE revenues over an 18-month period. Preliminary estimates by the Department of Revenue showed a $390 million net loss in property tax revenues and an 18-month loss in MVE revenues of $225 million. As noted above, on July 1, 1981 the Department of Revenue estimated a 12-month loss of $490 million.

15. We make this statement based on our analysis of the causes of high property taxes in the state. To the extent that the electorate believes that high property taxes are the result of inefficiency and waste, nowever, additional state aid may create problems; by giving aid to the cities and towns, the state makes it possible for local officials to avoid the hard choices that many supporters of Proposition 2-1/2 wanted them to be forced to make. For an analysis of what voters wanted, see Helen F. Ladd and Julie Boatright Wilson, "Proposition 2-1/2: Explaining the Vote," John F. Kennedy School of Government, Research Report 1, April 1981.

16. Taxable property values (called "equalized valuations") are estimated by the Massachusetts Department of Revenue (DOR) for cities and towns that do not assess property at 100 percent of market value. The equalized values are likely to be underestimates of actual 1981 full market values because they are based on 1980 valuations. In addition, the DOR tends to underestimate the property values in cities and urbanized towns by a greater amount than those in homogeneous residential communities. Effective tax rates are calculated as the ratio of a city's or town's property tax levy to its equalized valuation. Hence the effective tax rate is overstated where the equalized valuation is underestimated. The 10 percent maximum figure cited in the text is for Boston, and is likely to be an overestimate for these reasons.

    The analysis throughout the text is based on the 336 Massachusetts cities and towns with population over 500. Because the 15 towns with 1980 population less than 500 contain less than one tenth of 1 percent (.08%) of the state's population, results for the remaining 336 cities and towns are representative of the entire state.

17. Some low tax rate communities are exceptions. Those with 1979 tax rates below 2-1/2 percent were assigned the lesser percentage as their limit. If their current tax rate is above the limit, they are required to reduce their property tax levy to the limit or by 15 percent annually until the limit is reached.

18. The figures reported in the "average resident" row of Table 1 are weighted averages of the individual community data, where the weights are community population. Hence for each column they represent the community characteristic (tax rate, valuation, expenditures) faced by the average resident in the state. All other rows (except "statewide total") weight all cities and towns equally.

19. Some of the smaller towns also experience large property tax reductions because of the provision setting the limit equal to the 1979 effective property tax rate for towns in which that rate was below 2-1/2 percent.

20. The EMG is also known as the lottery formula because it is used to distribute revenues from the state lottery. The formula defines an individual municipality's share as follows:

$$\text{Town i Share} = \frac{\left(\frac{\text{State equalized value per capita}}{\text{Equalized value per capita, town i}}\right) \text{ Population of town i}}{\sum_{i=1}^{351}\left\{\left(\frac{\text{State equalized value per capita}}{\text{Equalized value per capita, town i}}\right) \text{ Population of town i}\right\}}$$

21. See Helen F. Ladd and Julie Boatright Wilson, "Proposition 2-1/2: Explaining the Vote," John F. Kennedy School of Government, Research Report R81-1, April 1981 for evidence that the desire for and expectation of more efficient government was a major factor motivating support for Proposition 2-1/2.

22. The discrepancy between the $221 million figure cited at the time of its enactment in July 1981 and the $205 million figure shown in Table 4 for the EMG occurs because the funds actually available were smaller than initially estimated.

23. The amounts of aid provided under the three plans shown in Table 10 are not exactly comparable because the state totals (as shown in the final row) are not equal. However, the patterns across city and town types are the focus here.

24. Estimated by the Massachusetts Department of Revenue.

25. Over the longer run, the limitation of levy growth to 2-1/2 percent is likely to result in tax rate disparities widening again after the high rate areas have reached 2-1/2 percent. That provision states that a city's or town's property tax levy may grow at a maximum of 2-1/2 percent annually regardless of growth in the taxable property base. Communities with rates below 2-1/2 percent in 1970 have that lower rate as their limit; with a 2-1/2 percent levy growth limit, their rates are likely to remain well below 2-1/2 percent. At the same time, effective tax rates will fall more rapidly in fast growth areas than in areas with base growth only slightly above 2-1/2 percent per year. These two factors will combine to widen disparities if history is any indication: Areas with low effective property tax rates in FY81 showed greater growth (in population) during the 1970's than areas with higher tax rates.

26. The latter are notoriously difficult to measure, but are illustrated by high costs of fire protection in areas with run-down buildings, high traffic control costs where many nonresident commuters use the roads, and high per pupil school costs where substantial fractions of students need bilingual or remedial education. At a simpler level, school needs can be measured by the number of students.

27. As originally passed, Proposition 2-1/2 allowed local overrides only in biennial statewide November elections, and required a two-thirds favorable vote with the participation of at least 30 percent of a municipality's eligible voters. Because the timing of the possible override election was unrelated to the budget process, overrides were not a viable option for FY82. The amendments now permit two-thirds of the board of selectmen or city council (with the mayor's approval) to put a

referendum question up for a vote at any time. A majority vote on the referendum may allow up to a 5 percent increase in the levy or a lessening of the required reduction to 7-1/2 percent. In no case, however, may a community vote to increase its tax rate beyond 2-1/2 percent.

28. An equalizing aid formula would also (somewnat inaccurately) cushion required second year revenue losses because those cities and towns that are facing second year cuts on average have low-revenue raising capacity. However, since there are low-base communities with no second year cuts, a more target-efficient approach would be to allocate part of the new aid in proportion to FY83 losses and part on an equalizing basis.

29. If the 2-1/2 percent rate limit or 2-1/2 percent annual levy growth limit are binding constraints on all communities, then local decision-makers have no discretion in setting the budget total. They retain the power, however, to allocate available revenues among uses.

30. The two qualifications on the sample's representativeness are as follows: First, the sample excludes the 52 regional academic and the 27 regional vocational school districts. (Similar data are available for about 40 regional districts, but we have not analyzed them.) Second, only 6 of the 21 towns and cities with population over 50,000 are included in the sample, and none of the three largest cities -- Boston, Springfield, and Worcester -- are included. Hence, the results reported here underrepresent both the state's smallest communities, many of whom are members of regional school districts, and its largest cities.

31. We do not view this as a major limitation of the data, however, since in most towns the general magnitude of the cuts was negotiated between the school committee and the finance committee in advance of the town meeting.

32. Note that if these municipal revenue losses were expressed as a fraction of gross expenditures, the percentage changes would be closer to zero, and the contrast with school reductions even greater.

33. Correction for inflation uses U.S. state and local public sector price deflator.

34. Sources: Expenditure and population data from Governmental Finances, 1974-75 and 1979-80 editions; enrollemnt data from Digest of Education Statistics, 1975 and 1980 editions.

35. The pupil weights are those used in the current school aid formula and represent the approximate relative costs of educating different types of students. The weights (which refer to full time equivalent students) are as follows: regular day program, 1.0; transitional bilingual program, 1.4; special education program, 4.0; special education residential program, 6.3; vocational education day program, 2.0; low income pupils, and additional weight of 0.2. Because the Department of

Education does not calculate expenditures per weighted pupil, we estimated it for each city and town as follows: We first adjusted total expenditures and total full time equivalent students from the end-of-year reports for students attending regional schools and for students "tuitioned-in" from other districts. We then average membership minus our estimate of regional school pupils to weighted pupils as reported by the Department of Education. The adjustments reflect the fact that weighted pupils as reported by the Department of Education for any city or town exclude students attending regional schools and count students who attend public schools outside their district of residence on a tuition basis as pupils of their city or town of residence.

Ideally, one should deflate the expenditure numbers by an index of the costs of educational inputs across districts. Such an index is difficult to construct even if one bases it solely on teacher salaries. The difficulty is that high teacher salaries (even for a given education and experience level (may reflect high costs in one jurisdiction and high quality in another.

36. According to estimates by the National Center for Education Statistics, Massachusetts' disparity index of 2.22 was the highest of any state in 1977. The disparity index is the ratio of expenditures at the 95th percentile of students to expenditures at the 5th percentile of students. As a result of the 1970 school aid package, Massachusetts' index is now probably somewhat lower than it was in 1977. But in the aggregate, state school aid to local governments in Massachusetts still covered only 30 percent of local education expenditures in fiscal 1960, far less than the U.S. average (53.6 percent).

37. Because of data limitations, our quintiles are based on only 280 of the 297 school districts operated by cities and towns. This should have no effect on the conclusions.